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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,843	03/06/2006	Guofu Zhou	USQ30309	7364
24737 7590 12/26/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER				
STEINBERG, JEFFREY S				
ART UNIT		PAPER NUMBER		
4193				
MAIL DATE		DELIVERY MODE		
12/26/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/570,843

Applicant(s)

ZHOU ET AL.

Examiner

JEFFREY STEINBERG

Art Unit

4193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☐ Claim(s) _____ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 06 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 3/6/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figures 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). The remaining figures should, likewise, be labeled accordingly. Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The Specification is objected to because of its informality. Please see the guidelines below. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over EPO 0 186 519 (EPO '519) in view of Blackson et al. (US 7,023,409) and further in view of Zehner et al. (US 7,012,600).
2. Regarding Claims 1 and 8, EPO '519 discloses a method for providing a set of voltage waveforms for updating at least a portion of a hi-stable display in successive frame periods (Page 11, 2nd paragraph) in an electrophoretic display (Page 1, 3rd paragraph), the method comprising: accessing data defining the set of voltage

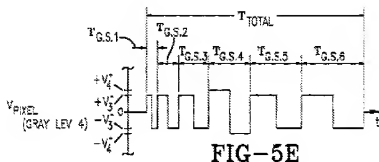
waveforms for the successive frame periods (Col. 6, line 43); and generating the set of voltage waveforms (for driving the at least a portion of the bi-stable display) during the successive fine frame periods (EPO '519, Page 1, 3d paragraph and Claim 13) according to the accessed data. However, EPO '519 fails to disclose a duration of the successive frame periods, each of the voltage waveforms spans a first range of values; and at least one of the successive frame periods is time-aligned with a data-dependent portion of each of the voltage waveforms that spans a second range of values that is a subset of the first range of values. Blackson teaches in Fig. 5E (reproduced below) successive frame periods, $T_{G.S.1}$ through $T_{G.S.6}$, for a single pixel and thus this display having multiple pixels will have a multiplicity of these drive waveforms which span between $+V_3$ and $-V_3$. EPO('519) and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 by the teachings of Blackson, since such a modification would have improved the performance of the display.

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Regarding Claims 2, 10, 11, and 14, EPO '519 fails to disclose that at least one other of the successive frame periods is time-aligned with a data-dependent portion of each of the voltage waveforms that spans a third range of values that is a subset of the first range of values. Blackson teaches, specifically, in Fig 5E (above) $T_{G.S.3}$, which is one time period, spans $+V_3$ to $-V_3$, which is a subset of $+V_4$ to $-V_4$. since all the waveforms are driven by image data then this time frame is data dependent. EPO('519) and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 by the teachings of Blackson, since such a modification would have improved the performance of the display.

Regarding Claim 3, the EPO '519 fails to disclose that the second and third ranges of values are contiguous and span the first range of values. Blackson teaches in Fig. 5E (reproduced above) contiguous frame periods, $T_{G.S.1}$ through $T_{G.S.6}$, for a single pixel and thus this display having multiple pixels will have a multiplicity of these drive waveforms. EPO('519) and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 by the teachings of Blackson, since such a modification would have improved the performance of the display.

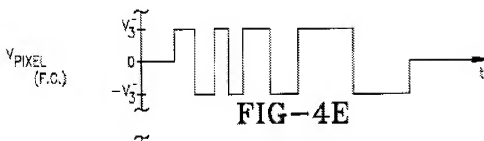
Regarding Claims 4, 9, 10, 12, 16, 17, and 19 of the EPO '519 fails to disclose a relatively shorter frame period (FT') used during the at least one of the successive frame periods. Blackson teaches an alternative drive scheme wherein the shortest pulse time period is about half the duration of the next longest time period. (Figure 4E, reproduced below) EPO '519 and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 with the teachings of Blackson and Whitesides, since both references apply to bi-stable displays and such a modification would have improved the performance of said display.

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Regarding Claims 5, 13 and 18, the EPO '519 fails to disclose the data-dependent portion of each of the voltage waveforms comprises a reset portion and a drive portion. Blackson teaches, specifically, in Fig 5E (above) $T_{G.S.3}$, which is one time period, spans $+V_3$ to $-V_3$, which is a subset of $+V_4$ to $-V_4$. since all the waveforms are driven by image data then this time frame is data dependent. EPO('519) and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 by the teachings of Blackson, since such a modification would have improved the performance of the display.

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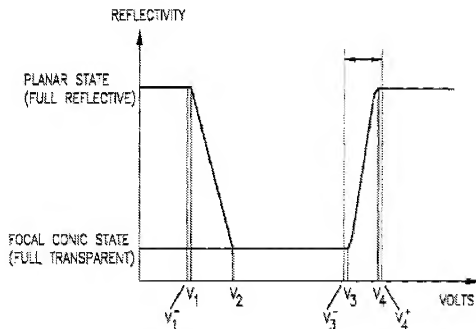


FIG-2

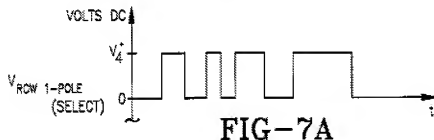
Regarding Claim 6, the EPO '519 fails to disclose that the data-dependent portion of each of the voltage waveforms comprises a drive portion. Blackson teaches, specifically, in Fig 2 (reproduced immediately above) as explained in Column 4, lines 25-38 of the reference EPO('519) and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 by the teachings of Blackson, since such a modification would have improved the performance of the display.

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Regarding Claim 7, the EPO '519 fails to disclose that data-dependent portion of each of the voltage waveforms comprises a first drive portion, followed by a delay, followed by a second drive portion. Blackson teaches, specifically, in Fig 7 (reproduced immediately above) an alternative time modulation technique which employs pulses without amplitude ("delay" pulses). EPO '519 and Blackson are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to

modify the Display Device disclosed by EPO '519 by the teachings of Blackson, since such a modification would have improved the performance of the display.

Regarding Claim 15, the EPO '519 fails to disclose that the method further comprises: lowering a supply voltage of a voltage source used for the generating of the set of voltage waveforms during the at least one of the successive frame periods, from a supply voltage associated with the first range of values to a supply voltage associated with the second range of values. Blackson teaches that the reduction in drive frequency saves power thereby allowing for a lower supply voltage. (Column 9, line 44).

3. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over EPO 0 186 519 (EPO '519) in view of Blackson et al. (US 7,023,409), as applied to claims 1-19, and further in view of Zehner et al. (US 7,012,600).

Regarding Claims 20 and 21, the EPO '519 fails to disclose a controller comprising means for accessing data defining a set of 25 voltage waveforms for updating at least a portion of a bi-stable display in successive frame periods and comprising an arithmetic logic circuit configured to generate the set of voltage waveforms for driving the at least a portion of the bi-stable display during the successive frame periods according to the accessed data; wherein over a duration of the successive frame periods, each of the voltage waveforms spans a first range of values; and at least one of the successive frame periods is time-aligned with a data-dependent portion of each of the voltage waveforms that spans a second range of values that is a subset of the first range of

values. Zehner teaches the controller comprising input means, calculation means, storage means and output means for generating a plurality of pulses. (Col. 13, lines 43-51). EPO '519 in view of Blackson et al. and further in view of Zehner are analogous because they are from the same field of endeavor, i.e. display devices. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Display Device disclosed by EPO '519 by the teachings of Zehner, since such a modification would have improved the performance of the display.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY STEINBERG whose telephone number is (571)270-7617. The examiner can normally be reached on Monday-Friday 7:30am-4:30pm.

If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFREY STEINBERG/
Examiner, Art Unit 4193